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Research report

Communicative skills of general practitioners augment the effectiveness of guideline-based depression treatment

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Abstract

Background: Although good physician communication is associated with positive patient outcomes, it does not figure in current depression treatment guidelines. We examined the effect of depression treatment, communicative skills and their interaction on patient outcomes for depression in primary care.

Methods: In a cohort of 348 patients with ICD-10 depression in primary care, patient outcomes were studied over 3- and 12-month follow-ups. The association of these outcomes with both depression-specific process of care variables and a nonspecific variable—communicative skillfulness of GP—was examined. Patient outcomes consisted of change from baseline in symptomatology, disability, activity limitation days, and duration of the depressive episode.

Results: In accordance with treatment guidelines, some main effects of depression treatment were found, in particular on symptomatology, but these remained small (effect size < 0.50). A moderate effect was found for treatment with a sedative, which proved to be related to worse patient outcomes at 12 months. An accurate GP diagnosis of depression and adequate antidepressant treatment were associated with better patient outcomes, but only when provided by GPs with good communicative skills. In contrast to the main effects, these interactions were seen on disability and activity limitation days, not on symptomatology.

Limitations: The study is observational and does not permit firm conclusions about causal relationships. Communicative skillfulness of the GP was assessed by patient report only.

Conclusion: Neither depression-specific interventions nor good GP communication skills seem to be sufficient for optimal patient improvement. Only the combination of treatments according to guidelines and good communication skills results in an effective antidepressive treatment.

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Keywords: Depression; Primary care; Communicative skills

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1. Introduction

Two approaches to improve the effects of depression management in primary care have been studied. The first targets the depression-specific aspects of care stressed in current clinical guidelines. The second addresses nonspecific aspects of care, in particular the communication skills of the GP. Both approaches have been shown to be effective in improving patient outcomes (Rutz et al., 1990; Schulberg et al., 1996; Katon et al., 1996; Roter et al., 1995). Whether these effects are additive or dependent remains unclear, however. Therefore, we examined the main effects of both specific and nonspecific aspects of depression care on outcome as well as their interaction. The core hypothesis in the study was that the effectiveness of the depression-specific interventions depends on the communicative skillfulness of the GP providing the treatment.

2. Methods

2.1. Patients and data collection

The present analyses were carried out using data from an intervention study designed to improve process of care for depression and patient outcomes in primary care (Ormel et al., 1998; van Os et al., 1999, 2002, 2004; Tiemens et al., 1999). Eighteen GPs participated in the study. Consecutive patients, aged 18 to 65 years, attending one of the GPs at randomly selected days, were assessed by screening and standardized psychiatric interview. They were asked to fill in a screening questionnaire for mental health problems, the GHQ-12 (Goldberg and Williams, 1988), while waiting to see their GP. Based on the results of this screening, a stratified random sample—oversampling patients with a high probability for the presence of mental health problems—was invited for a psychiatric interview within 2 weeks of the visit to the GP. The interview included the depression section of the Composite International Diagnostic Interview-Primary Health Care Version (CIDI-PHC) (WHO, 1990; VonKorff and Üstun, 1995). A trained research assistant carried out the baseline interview. All patients with a current depressive episode according to ICD-10 criteria

(WHO, 1992) on the CIDI-PHC were asked to participate in 3- and 12-month follow-ups. At the 12-month follow-up the patients were again interviewed with the CIDI-PHC. After complete description of the study to the patients, written informed consent was obtained.

2.2. Measures

2.2.1. Process of care

At baseline the GPs recorded the following aspects of the care process: (a) the presence of any psychopathology; (b) their diagnosis of the psychopathology; and (c) any treatment provided. Patients who had a current ICD-10 depression according to the CIDI-PHC were classified as ICD-depression cases. ICD-depression cases, who were judged by the GP to have a mental health disorder, will be indicated as ‘recognized cases’. Those ICD-depression cases who were diagnosed by the GP to have a depression are called ‘accurately diagnosed cases’.

Duration and dosage of antidepressive medication for patients who received an antidepressant at baseline or during the follow-up period were assessed at a 1-year follow-up interview with the GP and by examining medical records. Patients, aged 18 to 60, were considered to have received an adequate dosage if they were prescribed a minimum daily dose of 100 mg imipramine, clomipramine, desipramine or maprotiline, 75 mg nortriptyline, 60 mg mianserine, 150 mg fluvoxamine, or 20 mg paroxetine or fluoxetine (AHCPR, 1993). Patients aged 60 to 65 were considered to have received an adequate dosage if they were prescribed a minimum of 50% of the above dosages. Duration of the treatment was considered adequate if the patient was prescribed antidepressant medication during at least 3 months.

2.2.2. Communicative skillfulness

Main aspects of the communication skills of GPs shown to improve patient outcome are empathy and support (Roter et al., 1995; Haezen-Klemens and Lapinka, 1984; Stewart, 1995; Ablon and Jones, 1999; Norcross, 2002). These care aspects were assessed at baseline by patient questionnaire. Empathy was assessed by five questions about the interaction with the physician during the index visit. These questions were: (1) Did your doctor show interest in

you personally? (2) Did your doctor let you tell your story and did (s) he listen carefully? (3) Did your doctor ask useful questions? (4) Did your doctor show understanding for your situation? (5) Did you have the impression that your doctor understood exactly your feelings during the consultation? On each question the patient was asked to rate the doctor behavior on a 10-point scale. The five questions were combined to a mean score, ranging from 0 to 10 (mean inter-item correlation=0.69; range 0.59–0.83; alpha=0.91).

Support was assessed by four questions about the interaction with the physician during the index visit. These questions were: (1) Did your doctor ask about the ways you cope with your problems? (2) Did your doctor ask about moments when you felt better in the last weeks? (3) Did your doctor show appreciation about your coping with your problems? (4) Did your doctor show appreciation of your readiness to cope with your problems? On each question the patient was asked to rate the doctor's behavior on a 10-point scale. The four questions were combined to a mean score, ranging from 0 to 10 (inter-item correlation=0.54; range 0.42–0.69; alpha=0.82). The empathy and support scores were considerably correlated ($r=0.45$). We therefore standardized and combined the two scores to a single 'communicative skillfulness score' for the GP. Communicative skillfulness was considered a characteristic of the physician and not of the individual physician–patient interaction. Moreover, assessment of the GP-skillfulness by individual patients was considered too unreliable, open to bias and potentially affected by the course of the disorder to examine as a process of care influence on patient outcome. Therefore, we calculated the mean communicative skillfulness score for each GP based on the scores from his/her patients and separately for the pre- and post-training periods. The mean number of patients on which a GP's skillfulness score was based was 8.3 (S.D. 3.7). This means that, contrary to the other process of care variables, the skillfulness score is a variable on the GP level, not on the patient level. To study whether the effect of depression-specific process of care is influenced by the communicative skillfulness of the GP, we divided the GPs in two equally sized groups: a group of skillful and a group of less skillful GPs, based on the median of the GP skillfulness scores.

The effect size of this division was 0.61, which is a moderate strong effect (Kazis et al., 1989).

2.2.3. Patient outcomes

Patient outcomes were based on assessments at baseline and the 3- and 12-month follow-ups. We assessed two patient outcomes: severity and duration of the depression episode. Severity concerned symptomatology, disability and activity limitation days. To measure symptomatology, we used 51 items of the SCL-90 (Derogatis et al., 1974), consisting of the items of the subscales depression, anxiety, sleeping problems and somatic complaints. The average item score (range 1–5) over the 51 items was used. Disability due to the depression was assessed with the Brief Disability Questionnaire (BDQ) (VonKorff and Üstun, 1995). The BDQ assesses the patient's self-report on daily functioning, daily responsibilities, motivation for work, personal efficiency and deterioration in social relations, resulting in a disability score (range 0–10) and the number of activity limitation days in the prior month. Change scores over the 3- and 12-month follow-up period were calculated for change in symptomatology, disability and activity limitation days. These scores were substantially correlated (mean correlation over the 3-month follow-up was 0.37 (range 0.31 to 0.48) and over the 12-months follow-up 0.42 (range 0.34 to 0.51). To reduce the risk of chance findings, we combined the three measures of patient outcome and only studied change on the individual outcome measure, if a significant change on the combined measure was found. Sum scores of standardized change scores for symptomatology, disability and activity limitation days were calculated for the 3-month and 12-month follow-up periods, giving change in severity scores over 3 and 12 months, respectively.

Duration of the depression episode was based on time to remission as assessed in the 1-year follow-up CIDI-PHC-interview with the patient. Remission was defined as not meeting criteria for ICD-10 depression at the 12-month follow-up (Tiemens et al., 1999).

2.3. Analysis

The association between GP process of care and patient outcomes was examined with linear regression for 'change in severity' and with Cox-regression for

‘episode duration’. We included all patients with an ICD-10 depression at baseline in the analyses, and controlled for the patient characteristics: gender, age, years of education, and the illness characteristics: number of depression symptoms in the CIDI-PHC at baseline, pre-baseline duration of the episode and comorbidity with anxiety. First, we evaluated the main effects of depression-specific process of care and GP skillfulness on patient outcomes. Then, we studied the interaction between communicative skillfulness and depression-specific process of care on patient outcomes.

The main effects will be expressed as an effect size, which is the mean difference in patient outcomes between patients receiving the process of care and those not receiving it, divided by the standard deviation of outcomes within the two groups. The interaction effect between depression-specific process of care and GP communicative skillfulness is expressed as the difference in effect size for the process of care variable between skillful and less skillful GPs. Effect sizes less than 0.20 are considered negligible, those from 0.20 to 0.50 are small, from 0.50 to 0.80 are moderate and those greater than 0.80 are large (Kazis et al., 1989).

3. Results

Three-hundred forty-eight patients with an ICD-10 depression were identified at baseline by screening and subsequent diagnostic interview. At the 3-month outcome assessment 86 patients did not participate, 39 had missing data on an outcome measure and 8 on control variables leaving 215 patients (62%) for the analyses. At the 12-month outcome assessment, 63

Table 1
Sample characteristics and comparison with dropouts

	Sample (n=296)	Dropouts (n=52)	p
Female	70%	67%	0.74
Age, mean in years (S.D.)	39.3 (11.2)	40.5 (12.3)	0.47
Years of education (S.D.)	12.2 (6.4)	10.7 (4.0)	0.10
Number of depression symptoms (S.D.)	10.5 (4.2)	9.8 (4.2)	0.29
Duration >12 months	46%	52%	0.45
Comorbid anxiety	36%	38%	0.75

Table 2

Main effects of process of care on patient change in severity over 3-month and 12-month follow-ups; effect size and 95% CI adjusted for confounding^a

Process of care	N	3-month ES	12-month ES
<i>Recognition</i>			
No	51	0.21 (−0.11; 0.52)	0.45 (0.13; 0.76)
Yes	164		
<i>Accurate diagnosis</i>			
No	111	0.18 (−0.09; 0.45)	0.32 (0.05; 0.60)
Yes	104		
<i>Antidepressant</i>			
No	165	0.06 (−0.26; 0.37)	0.18 (−0.15; 0.50)
Yes	50		
<i>Sedative</i>			
No	191	−0.42 (−0.84; 0.00)	−0.58 (−1.05; −0.11)
Yes	24		
<i>Counseling</i>			
No	114	0.17 (−0.10; 0.44)	0.23 (−0.05; 0.50)
Yes	101		
<i>Adequate antidepressant treatment</i>			
No	169	0.18 (−0.17; 0.53)	0.26 (−0.10; 0.62)
Yes	38		
<i>Communicative skillfulness</i>			
No	102	0.21 (−0.05; 0.48)	−0.05 (−0.32; 0.22)
Yes	114		

^a Adjusted for gender, age, educational level, # depression symptoms at baseline, pre-baseline duration of the episode and comorbidity with anxiety.

patients did not participate, 70 had missing data on an outcome measure and 8 on control variables leaving 207 patients (59%). Episode duration was assessed for 257 patients (74%). Fifty-two patients (15%) did not participate in any outcome assessment. In Table 1 these dropouts are compared to the study sample on the control variables. No significant differences between the two groups were found.

Table 2 shows the main effects of the process of care variables on patient change in severity over the 3-month and 12-month follow-ups, after control for confounding. At 3 months only a negative effect of sedative treatment on patient outcome is found, but this effect is small. The 12 months’ effects—found for

recognition, accurate diagnosis and sedative treatment—are bigger than at 3 months, but again generally remain small. Only sedative treatment proved to have a moderate effect on patient change over 12 months. This effect is negative. Treatment with a sedative is associated with less favourable outcomes compared to patients who did not receive sedative treatment.

Exploring the above findings on the composite outcome measure for the component outcome measures shows that the negative effect of sedative treatment on 3 months outcome is only found for change in symptomatology (ES -0.44 ; 95% CI $-0.87, -0.01$), but not for change in disability or change in activity limitation days. At 12 months the effect of recognition is seen on symptomatology (ES 0.43 ; CI $0.09, 0.76$) and disability (ES 0.37 ; CI $0.04, 0.69$) but not on activity limitation days; the effect of sedative treatment is seen on symptomatology (ES -0.51 ; CI $-1.00, -0.01$) and activity limitation days (ES -0.53 ; CI $-1.02, -0.04$) but not on disability; and the effect of an accurate diagnosis is seen on symptomatology only (ES 0.34 ; CI $0.04, 0.64$).

Table 3 shows the interaction between depression-specific process of care and communicative skillfulness of the GP. At 3-month follow-up, we found that accuracy of diagnosis and adequate antidepressant treatment were associated with better patient outcomes, but only if applied by communicatively

skillful GPs (accuracy of diagnosis: ES 0.46 ; CI $0.09, 0.83$; adequate antidepressant treatment: ES 0.44 ; CI $0.01, 0.86$). Antidepressant treatment tended to be associated with better outcome, if provided by skillful GPs (ES 0.36 ; CI $-0.04, 0.76$), and with worse patient outcome, if provided by less skillful GPs (ES -0.46 ; CI $-0.99, 0.07$).

As shown in Table 2, whether the patient was treated by a communicatively skillful GP or not did not have an independent effect on patient outcome over 3 months. Only when the skills were combined with depression-specific interventions, the skillful GPs achieved better results than the less skillful GPs applying the same intervention. Within the group of accurately diagnosed patients, the skillfulness of the GP had an effect size of 0.51 (CI $0.12, 0.90$) on patient change over 3 months, within those who received antidepressant treatment, 0.91 (CI $0.32, 1.50$), and among adequately treated patients with an antidepressant, 1.13 (CI $0.35, 1.91$). No effect of GP communicative skills was found among the patients who were inadequately diagnosed, who did not receive antidepressant treatment, or whose antidepressant treatment was inadequate. This suggests that it is not the communicative skillfulness of the GP per se that brings about better patient outcomes, but the combination of good skills and depression-specific interventions.

For recognition of the depression as a mental health problem, prescription of a sedative and counseling, no interaction with the communicative skills of the GP was found.

The above interaction effects at 3 months of GP communicative skillfulness with antidepressant treatment and with adequate antidepressant treatment are seen on disability (ES 0.84 ; CI $0.15, 1.53$ and ES 1.22 ; CI $0.35, 2.09$ respectively) and on activity limitation days (ES 0.81 ; CI $0.10, 1.52$ and ES 0.95 ; CI $0.07, 1.83$, respectively), and the interaction with accuracy of diagnosis is seen on disability only (ES 0.77 ; CI $0.21, 1.34$). No interaction effects of GP communicative skillfulness are seen on symptomatology.

At 12 months, we find interactions of GP communication skills with antidepressant treatment and adequacy of antidepressant treatment. Antidepressant treatment and adequate antidepressant treatment are associated with better patient outcomes if applied by communicatively skillful GPs (ES 0.48 ; CI

Table 3

Interaction between depression-specific process of care and communicative skillfulness of the GP; difference in effect size of treatment by skillful GPs (with $N=114$ patients) and less skillful GPs (with $N=102$ patients) (95% CI adjusted for confounding^a)

Process of care	Difference in ES at 3 months	Difference in ES at 12 months
Recognition	$-0.03 (-0.67; 0.60)$	$0.02 (-0.60; 0.65)$
Accurate diagnosis	$0.60 (0.06; 1.14)$	$0.09 (-0.46; 0.64)$
Antidepressant	$0.82 (0.15; 1.49)$	$0.95 (0.25; 1.65)$
Sedative	$-0.09 (-0.94; 0.76)$	$-0.48 (-1.44; 0.47)$
Counseling	$-0.12 (-0.66; 0.42)$	$-0.19 (-0.74; 0.37)$
Adequate antidepressant treatment	$1.02 (0.19; 1.86)$	$1.48 (0.64; 2.32)$

^a Adjusted for gender, age, educational level, # depression symptoms at baseline, pre-baseline duration of the episode and comorbidity with anxiety.

0.07, 0.89, and ES 0.64; CI 0.21, 1.07, respectively), but if applied by less skillful GPs, they are associated with less patient change (ES -0.47 ; CI -1.04 , 0.09 , and ES -0.84 ; CI -1.57 , -0.12 , respectively).

Whether the patient is treated by a communicatively skillful GP or not, again, does not have an effect on patient outcome over 12 months, in its own right (see Table 2). Only when the skills are combined with depression-specific interventions, the skillful GPs achieved better results than the less skillful GPs applying the same intervention. Within the group of patients who received antidepressant treatment, communicative skillfulness of the GP had an effect size of 0.63 (CI 0.00, 1.26) on patient change over 12 months, and among those adequately treated with an antidepressant 1.10 (CI 0.31, 1.89). No effect of GP communicative skills was found among the patients without (adequate) antidepressive treatment. Again, this suggests that it is not the communicative skillfulness of the GP per se that brings about better patient outcomes, but the combination of good skills and depression-specific interventions.

For recognition, accurate diagnosis, prescription of a sedative and counseling, no interactions with the communicative skills of the GP were found at 12 months.

At 12 months, the interaction effects of GP communicative skillfulness with antidepressant treatment are only seen on activity limitation days (ES 1.04; CI 0.28; 1.80) while the interaction with adequate antidepressant treatment is seen on activity limitation days (ES 1.44; CI 0.53, 2.35) and disability (ES 1.19; CI 0.29, 2.09). Again, no interaction effects are seen on symptomatology.

With respect to the patient outcome of episode duration, we found a marginally significant interaction between the effects of GP communicative skills and accurately diagnosing the depression ($\chi^2=3.26$; $df=1$; $p=0.07$). Within the accurately diagnosed patients, the communicative skills of the GP are associated with a shorter duration of the episode (HR 0.57; CI 0.36, 0.91), whereas no effect of the GP skills was found among the inaccurately diagnosed patients. Within the patients of communicatively skillful GPs, an accurate diagnosis tended to be associated with a shorter duration of the depression episode (HR 0.72; CI 0.47, 1.11), whereas it had no effect for patients of communicatively less skillful GPs.

Independent of any depression-specific process of care variable, GP communicative skillfulness was marginally related to a reduction in episode duration (HR 0.76; CI 0.56, 1.04). Apart from accuracy of diagnosis, no other process of care variable showed a significant association with episode duration, either independent or in interaction with GP communicative skillfulness.

4. Discussion

4.1. Findings

We investigated the association between process of care for depression and patient outcomes over 3 and 12 months in a naturalistic design, and examined main effects as well as interactions with the communicative skillfulness of the GP providing the care. On the composite outcome measure, small independent effects on patient outcome were found for recognition and accuracy of diagnosis. A moderate effect on patient outcome was found for treatment with a sedative, which proved to be related to worse patient outcome compared to treatment without a sedative. The main finding, however, was that the effectiveness of depression-specific process of care depends on the communicative skillfulness of the GP providing the care. Accuracy of diagnosis, antidepressant treatment and adequacy of antidepressant treatment were only associated with better patient outcomes when provided by a communicatively skillful GP, whereas antidepressant treatment tended to be associated with worse patient outcomes when applied by a less skillful GP. In addition, the duration of the depression episode tended to be shorter when the depression was accurately diagnosed by a communicatively skillful doctor, but not when it was accurately diagnosed by a less skillful doctor.

Communicative skillfulness of the GP did not have an independent effect on patient outcome, with the exception of a marginal reduction of the episode duration. Only when the skillfulness was combined with a depression-specific intervention, such as an accurate diagnosis, antidepressant treatment or adequate dosage and duration of antidepressant treatment, better patient outcomes were found. The effects of depression-specific process of care and communi-

cation skills of the GP, therefore, prove to be interdependent, and only when both aspects of care are combined, potent interventions for depression in primary care result.

Exploration of the findings on the composite outcome measure for the component measures pointed out remarkable differences between effects on symptomatology compared to effects on disability and activity limitation days. Main effects of care interventions were seen on symptomatology, whereas the effects of these interventions on disability and activity limitation days were found to depend on the communicative skillfulness of the GP providing the intervention. It may therefore be speculated that—in accordance with current depression guidelines—the technical aspects of care (what is done) are sufficient to improve the symptomatology of depression, but that the communicative skills of the GP (how it is done) are necessary to also improve the behavior of the patient and the consequences of the depression for the patient's life, as expressed by the disability and activity limitation days experienced. A similar effect has been reported for the treatment of panic disorder, where medication was found to improve symptomatology, but physician skills were shown to be decisive to break through the avoidance behavior (Mattick et al., 1990). These findings suggest that treatment guidelines should not merely address the technical aspects of care but also the skills necessary to augment the effectiveness of the treatment interventions.

One could be surprised about the negative effect of depression treatment, as seen for example for sedative treatment or for antidepressant treatment administered by less communicators. However, it should be emphasized that in this study a negative effect does not necessarily mean that patients with the treatment deteriorate. It means that patients receiving the treatment did worse than patients without the treatment; the negative qualification of the effect is meant relatively.

4.2. Limitations

Although a negative effect of treatment does not necessarily mean that patients who receive the treatment deteriorated, it is remarkable that some depression interventions are associated with worse patient outcomes. Does this mean that the interventions hamper improvement? No, it does not. It should be

emphasized that our study is observational and that a major limitation of an observational study is that the patients who received the intervention are not necessarily similar to the patients who did not receive the treatment. For example, sedative and antidepressant treatment may be associated with worse patient outcome because GPs prescribe these drugs to patients in which they observe or expect a poor course (van den Brink et al., 2002). Indeed, in the present study, both patients who received a sedative and those who received an antidepressant were more symptomatic at baseline than the patients who did not receive the drug (sedative: mean item SCLscore 2.69 S.D. 0.71 vs. 2.39 S.D. 0.71; $p < 0.03$; antidepressant: mean item SCLscore 2.66 S.D. 0.76 vs. 2.36 S.D. 0.69; $p < 0.01$). Therefore, if the intervention is ineffective, one would expect a negative association between the intervention and patient outcomes. However, for antidepressant treatment, this negative association was only found for less communicatively skillful GPs, not for skillful GPs. It may therefore be speculated that communicatively skillful GPs managed to offset this poor prognosis of the patients they gave an antidepressant, by providing an effective treatment combination of the antidepressant and good communication, whereas the less skillful GPs did not.

A further limitation of this study is that the communicative skillfulness of the GP is only assessed by patient report. A more objective assessment, for example by video-ratings, was not feasible in the present study. However, in the analyses we did not use the skillfulness ratings on the patient level, but on the GP level, i.e., we used the combined ratings of a GP's patients for the distinction between skillful and less skillful GPs. Biases in individual patient ratings may therefore be expected to have canceled out.

4.3. Physician–patient communication

Good physician–patient communication matters in terms of emotional health of the patient, symptom resolution, functional and physiologic status and pain control (Stewart, 1995). Nevertheless, its importance is often neglected, although in psychotherapy outcome research the therapist–client relationship factors have been estimated to contribute 30% to patient outcome (Lambert and Barley, 2002). In depressed patients, a good physician–patient relationship and good commu-

nication skills may be the first step to remove feelings of demoralization and isolation, restore hope, enhance motivation for treatment and enhance compliance. Compliance with medical treatment recommendations has been reported to be extremely poor in depressed patients (DiMatteo et al., 2000). It may be here that good communication skills of GPs achieve their augmentative effectiveness for guideline-based depression interventions. Communicatively skillful GPs may, for example, be able to motivate their depressed patients to continue taking medication, even if they are already feeling better, while less skillful GPs may not. Although plausible, the present study does not permit testing this hypothesis on the mechanism underlying the augmentative effect of GP communication skills.

4.4. Conclusion

The major finding of the present study is that neither depression-specific interventions nor GP communication skills are sufficient to bring about patient change. Only the combination of these aspects of care results in an effective treatment of depression in primary care. This finding was corroborated by a parallel study, which showed that the effect of our GP training on patient outcomes was not so much due to the increase achieved in the number of patients receiving treatment according to depression guidelines (an increase from 8% to 26% of the patients with a recent onset depression, explaining 36% of the training effect on patient outcomes) nor to more patients being treated by a communicatively skillful GP (from 27% to 71%, explaining only 18% of patient change), but to the combination of these aspects of care (from 3% to 24%, explaining 59% of the training effect on patient outcomes) (van Os et al., 2004). Together the results of these two studies strongly suggest that the role of GP communicative skills should be explicitly addressed in future treatment guidelines for depression.

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References

- Ablon, S.T., Jones, E.E., 1999. Psychotherapy process in the NIMH collaborative study of depression research program. *J. Consult. Clin. Psychol.* 67, 64–75.
- Derogatis, L.R., Lipman, R.S., Rickels, K., Uhlenhuth, E.H., Covi, L., 1974. The Hopkins Symptom Checklist (HSCL): a self-report symptom inventory. *Behav. Sci.* 19, 1–15.
- DiMatteo, M.R., Lepper, H.S., Croghan, T.W., 2000. Depression is a risk factor for noncompliance with medical treatment: meta-analysis of the effects of anxiety and depression on patient adherence. *Arch. Int. Med.* 160 (14), 2101–2107.
- Goldberg, D.P., Williams, P., 1988. The Users to the General Health Questionnaire. National Foundation for Educational Research-Nelson, Slough, England.
- Haezen-Klemens, I., Lapinka, E., 1984. Doctor-patient interaction, patients' health behaviour and effects of treatment. *Soc. Sci. Med.* 19, 9–18.
- Katon, W., Von Korff, M., Lin, E., Bush, T., Ludman, E., Simon, G., Walker, E., 1996. A multifaceted Intervention to improve treatment of depression in primary care. *Arch. Gen. Psychiatry* 53, 924–932.
- Kazis, L.E., Anderson, J.J., Meenan, R.F., 1989. Effect sizes for interpreting changes in health status. *Med. Care* 27 (3), S178–S189.
- Lambert, M.J., Barley, D.E., 2002. Research summary on the therapeutic relationship and psychotherapy outcome. In: Norcross, J.C. (Ed.), *Psychotherapy Relationships That Work: Therapist Contributions and Responsiveness to Patients*. Oxford University Press.
- Mattick, R.P., Andrews, G., Hadzi-Pavlovic, D., Christensen, H., 1990. Treatment of panic and agoraphobia: an integrative review. *J. of Nerv. Ment. Dis.* 178 (9), 567–576.
- Norcross, J.C., 2002. Empirically supported therapy relationships. In: Norcross, J.C. (Ed.), *Psychotherapy Relationships that Work: Therapist Contributions and Responsiveness to Patients*. Oxford University Press.
- Ormel, J., Tiemens, B.G., van Os, T.W.D.P., van der Meer, K., Jenner, J.A., van den Brink, R.H.S., 1998. Betere herkenning en behandeling van depressie en soms sneller herstel na nascholing van huisartsen (Improved recognition and treatment of depression with occasional faster recovery through postgraduate training of family practitioners). *Ned. Tijdschr. Geneeskd.* 142, 2572–2577.
- Roter, D.L., Hall, J.A., Kern, D.E., Barker, R., Cole, K.A., Roca, R.P., 1995. Improving physicians interviewing skills and reducing patients emotional distress. *Arch. Intern. Med.* 155, 1877–1884.

- Rutz, W., von Knorring, L., Walinder, J., Wistedt, B., 1990. Effect of an educational program for general practitioners on Gotland on the pattern of prescription of psychotropic drugs. *Acta Psychiatr. Scand.* 82, 399–403.
- Schulberg, H.C., Block, M.R., Madonia, M.J., Scott, C.P., Rodriguez, E., Imber, S.D., Perel, J., Lave, J., Houck, P.R., Coulehan, J.L., 1996. Treating major depression in primary care practice. Eight-month clinical outcomes. *Arch. Gen. Psychiatry* 53, 913–919.
- Stewart, M.A., 1995. Effective physician–patient communication and health outcomes: a review. *Can. Med. Assoc.* 152 (9), 1423–1433.
- Tiemens, B., Ormel, J., Jenner, J.A., van der Meer, K., van Os, T.W.D.P., van den Brink, R.H.S., 1999. Training primary-care physicians to recognize, diagnose and manage depression: does it improve patient outcomes? *Psychol. Med.* 29, 833–845.
- van den Brink, R.H.S., Ormel, J., Tiemens, B.G., Smit, A., Jenner, J.A., van der Meer, K., van Os, T.W.D.P., 2002. Predictability of the one-year course of depression and generalized anxiety in primary care. *Gen. Hosp. Psych.* 24, 156–163.
- van Os, T.W.D.P., Ormel, J., van den Brink, R.H.S., Jenner, J.A., van der Meer, K., Tiemens, B.G., van der Doorn, W., Smit, A., van der Brink, W., 1999. Training general practitioners improves the management of depression. *Gen. Hosp. Psych.* 21, 168–176.
- van Os, T.W.D.P., van den Brink, R.H.S., Jenner, J.A., van der Meer, K., Tiemens, B.G., Ormel, J., 2002. Effects on depression pharmacotherapy of a Dutch general practitioner training program. *J. Affect. Disord.* 71, 105–111.
- van Os, T.W.D.P., van den Brink, R.H.S., Tiemens, B.G., Jenner, J.A., van der Meer, K., Ormel, J., 2004. Are effects of depression management training for general practitioners on patient outcomes mediated by improvements in the process of care? *J. Affect. Disord.* 80, 173–179.
- VonKorff, M., Üstun, T.B., 1995. Methods of the WHO collaborative project on psychological problems in general health care. In: Üstün, T.B., Sartorius, N. (Eds.), *Mental Illness in general health care: an international study*. Wiley & Sons, Chichester, pp. 19–38.
- World Health Organization, 1990. Composite International Diagnostic Interview (CIDI), version 1.0. WHO, Geneva.
- World Health Organization, 1992. The ICD-10 Classification of Mental and Behavioral Disorders: clinical description and diagnostic guidelines.